

WE CLAIM:

1. A therapeutic compound comprising

a) at least one drug moiety; and

b) at least one polypeptide drug carrier moiety,

wherein the drug moiety is covalently linked to the carrier moiety, and

wherein based on the total weight of the carrier moiety, the carrier moiety comprises from about 50% to about 90% glutamic acid, and from about 10% to about 50% of at least a second amino acid selected from the group consisting of aspartic acid, alanine, asparagine, glutamine, glycine, and any combinations thereof.

2. The therapeutic compound of claim 1, wherein the drug carrier moiety has a molecular weight from about 20,000 daltons to about 50,000 daltons

1 3. The therapeutic compound of claim 1, wherein the
2 second amino acid is aspartic acid.

1 4. The therapeutic compound of claim 1, wherein the
2 second amino acid consists of a combination of two
3 or more amino acids selected from the group
4 consisting of aspartic acid, alanine, asparagine,
5 glutamine, and glycine.

1 5. The therapeutic compound of claim 1, wherein the
2 drug moiety is a therapeutic metal.

1 6. The therapeutic compound of claim 5, wherein the
2 metal is selected from the group consisting of
3 platinum, iron, gadolinium, rhenium, manganese,
4 cobolt, indium, gallium or rhodium.

1 7. The therapeutic compound of claim 1, wherein the

1 drug moiety is 1,2-diaminocyclohexane platinum (II)
2 and 1,2-diaminocyclohexane-dichloro platinum (IV).

1 8. The therapeutic compound of claim 1, wherein
2 based on the total weight of the carrier moiety, the
3 carrier moiety comprises from about 60% to about 80%
4 glutamic acid, and from about 20% to about 40% of
5 the second amino acid.

1 9. The therapeutic compound of claim 8, wherein the
2 second amino acid is aspartic acid.

1 10. The therapeutic compound of claim 8, wherein the
2 second amino acid consists of a combination of two
3 or more amino acids selected from the group
4 consisting of aspartic acid, alanine, asparagine,
5 glutamine, and glycine.

1 11. The therapeutic compound of claim 1, wherein

1 based on the total weight of the carrier moiety, the
2 carrier moiety comprises from about 70% to about 75%
3 glutamic acid, and from about 25% to about 30% of
4 the second amino acid.

1 12. The therapeutic compound of claim 11, wherein
2 the second amino acid is aspartic acid.

1 13. The therapeutic compound of claim 11, wherein
2 the second amino acid consists of a combination of
3 two or more amino acids selected from the group
4 consisting of aspartic acid, alanine, asparagine,
5 glutamine, and glycine.

1 14. The therapeutic compound of claim 1 wherein
2 based on the total weight of the therapeutic
3 compound, the compound comprises from about 10 % to
4 about 60 % drug moiety.

1 15. The therapeutic compound of claim 1, wherein
2 based on the total weight of the therapeutic
3 compound, the compound comprises from about 40
4 percent to about 90 percent carrier moiety.

1 16. The therapeutic compound of claim 1 wherein
2 based on the total weight of the therapeutic
3 compound, the compound comprises about 20 percent to
4 about 50 percent drug moiety.

1 17. therapeutic compound of claim 1, wherein based
2 on the total weight of the therapeutic compound, the
3 compound comprises about 20 percent to about 40
4 percent drug moiety.

1 18. The therapeutic compound of claim 1, wherein the
2 amino acids can be in L form, or D form, or a
3 racemic mixture of L and D forms.

1 19. The therapeutic compound of claim 1 wherein the
2 drug moiety is platinum (II) and platinum (IV),

3 wherein based on the total weight of the carrier
4 moiety, the carrier moiety comprises about 70
5 percent glutamic acid and about 30 percent aspartic
6 acid,

7 wherein the drug moiety is about 24 percent to
8 about 30 percent by weight of the total weight of
9 the therapeutic compound, and

10 wherein the molecular weight of the therapeutic
11 compound is from about 26,000 to about 30,000
12 daltons.

13 20. A method for making a therapeutic compound, the
14 method comprising the steps of:

15 a) covalently conjugating at least one drug
16 moiety with at least one polypeptide drug carrier
17 moiety to create a therapeutic compound,

18 wherein based on the total weight of the carrier

1 moiety, the carrier moiety comprises from about 50%
2 to about 90% glutamic acid, and from about 10% to
3 about 50% of at least a second amino acid selected
4 from the group consisting of aspartic acid, alanine,
5 asparagine, glutamine, glycine, and any combinations
6 thereof.

21. The method of claim 20, wherein the drug carrier
moiety has a molecular weight from about 20,000
daltons to about 50,000 daltons

22. The method of claim 20, wherein the second amino
acid is aspartic acid.

23. The method of claim 20, wherein the second amino
acid consists of a combination of two or more amino
acids selected from the group consisting of aspartic
acid, alanine, asparagine, glutamine, and glycine.

1 24. The method of claim 20, wherein the drug moiety
2 is a therapeutic metal.

1 25. The method of claim 24, wherein the metal is
2 selected from the group consisting of platinum,
3 iron, gadolinium, rhenium, manganese, cobolt,
4 indium, gallium or rhodium.

1 26. The method of claim 20, wherein the drug moiety
2 is 1,2-diaminocyclohexane platinum (II) and 1,2-
3 diaminocyclohexane-dichloro platinum (IV).

1 27. The method of claim 20 wherein the drug moiety
2 is platinum (II) and platinum (IV),

3 wherein based on the total weight of the carrier
4 moiety, the carrier moiety comprises about 70
5 percent glutamic acid and about 30 percent aspartic
6 acid,

7 wherein the drug moiety is about 24 percent to

1 about 30 percent by weight of the total weight of
2 the therapeutic compound, and

3 wherein the molecular weight of the therapeutic
4 compound is from about 26,000 to about 30,000
5 daltons.

1 28. A composition comprising a therapeutic compound
2 wherein the compound comprises

3 a) at least one drug moiety; and

4 b) at least one polypeptide drug carrier
5 moiety,

6 wherein the drug moiety is covalently linked to
7 the carrier moiety, and

8 wherein based on the total weight of the carrier
9 moiety, the carrier moiety comprises from about 50%
10 to about 90% glutamic acid, and from about 10% to
11 about 50% of at least a second amino acid selected
12 from the group consisting of aspartic acid, alanine,
13 asparagine, glutamine, glycine, and any combinations

1 thereof.

1 29. The composition of claim 28, wherein the drug
2 carrier moiety has a molecular weight from about
3 20,000 daltons to about 50,000 daltons

1 30. The composition of claim 28, wherein the second
2 amino acid is aspartic acid.

1 31. The composition of claim 28, wherein the second
2 amino acid consists of a combination of two or more
3 amino acids selected from the group consisting of
4 aspartic acid, alanine, asparagine, glutamine, and
5 glycine.

1 32. The composition of claim 28, wherein the drug
2 moiety is a therapeutic metal.

1 33. The composition of claim 32, wherein the metal

1 is selected from the group consisting of platinum,
2 iron, gadolinium, rhenium, manganese, cobalt,
3 indium, gallium or rhodium.

1 34. The composition of claim 28, wherein the drug
2 moiety is 1,2-diaminocyclohexane platinum (II) and
3 1,2-diaminocyclohexane-dichloro platinum (IV).

1 35. The composition of claim 28 wherein the drug
2 moiety is platinum (II) and platinum (IV),

3 wherein based on the total weight of the carrier
4 moiety, the carrier moiety comprises about 70
5 percent glutamic acid and about 30 percent aspartic
6 acid,

7 wherein the drug moiety is about 24 percent to
8 about 30 percent by weight of the total weight of
9 the therapeutic compound, and

10 wherein the molecular weight of the therapeutic
11 compound is from about 26,000 to about 30,000

1 daltons.

1 36. A method for making a composition the method
2 comprising the steps of:

3 a) combining a pharmaceutical carrier with a
4 therapeutic compound to produce a composition,
5 wherein the therapeutic compound comprises

6 a) at least one drug moiety; and
7 b) at least one polypeptide drug carrier
8 moiety,

9 wherein the drug moiety is covalently linked to
10 the carrier moiety, and

11 wherein based on the total weight of the carrier
12 moiety, the carrier moiety comprises from about 50%
13 to about 90% glutamic acid, and from about 10% to
14 about 50% of at least a second amino acid selected
15 from the group consisting of aspartic acid, alanine,
16 asparagine, glutamine, glycine, and any combinations
17 thereof.

1 37. The method of claim 36, wherein the drug carrier
2 moiety has a molecular weight from about 20,000
3 daltons to about 50,000 daltons

1 38. The method of claim 36, wherein the second amino
2 acid is aspartic acid.

1 39. The method of claim 36, wherein the second amino
2 acid consists of a combination of two or more amino
3 acids selected from the group consisting of aspartic
4 acid, alanine, asparagine, glutamine, and glycine.

1 40. The method of claim 36, wherein the drug moiety
2 is a therapeutic metal.

1 41. The method of claim 40, wherein the metal is
2 selected from the group consisting of platinum,
3 iron, gadolinium, rhenium, manganese, cobolt,

1 indium, gallium or rhodium.

1 42. The method of claim 36, wherein the drug moiety
2 is 1,2-diaminocyclohexane platinum (II) and 1,2-
3 diaminocyclohexane-dichloro platinum (IV).

1 43. The method of claim 36 wherein the drug moiety
is platinum (II) and platinum (IV),

wherein based on the total weight of the carrier
moiety, the carrier moiety comprises about 70
percent glutamic acid and about 30 percent aspartic
acid,

wherein the drug moiety is about 24 percent to
about 30 percent by weight of the total weight of
the therapeutic compound, and

wherein the molecular weight of the therapeutic
compound is from about 26,000 to about 30,000
daltons.

1 44. The method of claim 36 wherein the composition
2 is in a solid dosage form or a liquid dosage form.

1 45. The method of claim 36 wherein the composition
2 is in a form selected from the group consisting of
3 solids, capsules, tablets, powders, elixirs, syrups,
4 emulsions, and suspensions.

1 46. A method for treating a patient afflicted with
2 a condition, the method comprising the step of

3 a) administering a therapeutically effective
4 amount of a therapeutic compound to a patient,
5 wherein the compound comprises

6 a) at least one drug moiety; and
7 b) at least one polypeptide drug carrier
8 moiety,

9 wherein the drug moiety is covalently linked to
10 the carrier moiety, and

11 wherein based on the total weight of the carrier

1 moiety, the carrier moiety comprises from about 50%
2 to about 90% glutamic acid, and from about 10% to
3 about 50% of at least a second amino acid selected
4 from the group consisting of aspartic acid, alanine,
5 asparagine, glutamine, glycine, and any combinations
6 thereof.

47. The method of claim 46, wherein the drug carrier
moiety has a molecular weight from about 20,000
daltons to about 50,000 daltons

48. The method of claim 46, wherein the second amino
acid is aspartic acid.

49. The method of claim 46, wherein the second amino
acid consists of a combination of two or more amino
acids selected from the group consisting of aspartic
acid, alanine, asparagine, glutamine, and glycine.

1 50. The method of claim 46, wherein the drug moiety
2 is a therapeutic metal.

1 51. The method of claim 50, wherein the metal is
2 selected from the group consisting of platinum,
3 iron, gadolinium, rhenium, manganese, cobalt,
4 indium, gallium or rhodium.

1 52. The method of claim 46, wherein the drug moiety
2 is 1,2-diaminocyclohexane platinum (II) and 1,2-
3 diaminocyclohexane-dichloro platinum (IV).

1 53. The method of claim 46 wherein the drug moiety
2 is platinum (II) and platinum (IV),

3 wherein based on the total weight of the carrier
4 moiety, the carrier moiety comprises about 70
5 percent glutamic acid and about 30 percent aspartic
6 acid,

7 wherein the drug moiety is about 24 percent to

1 about 30 percent by weight of the total weight of
2 the therapeutic compound, and

3 wherein the molecular weight of the therapeutic
4 compound is from about 26,000 to about 30,000
5 daltons.

1 54. The method of claim 46, wherein the step of
administering comprises administering to the patient
a therapeutic composition comprising the therapeutic
compound,

2 wherein the composition may be administered
orally or parenterally, and wherein the composition
may be in a solid dosage form, a liquid dosage form,
3 or any combination thereof.